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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/840,084

Applicant(s)

CHUNG, KYU-HWANG

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-20 ~~is/are~~ allowed.
- 6) ☒ Claim(s) 1-16 ~~is/are~~ rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to the Amendment, Paper No. 5, filed July 29, 2003.

Currently, claims 1-20 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art (Fig. 1) in view of Hansell, III et al. (USPN 5,176,538).

As shown in Fig. 1, Applicant's Prior Art discloses a flat panel displaying apparatus, comprising (see Specification, pages 6 and 7, paragraphs 23-27):

- a liquid crystal display module 117 displaying a picture;
- a chassis 119 surrounding edges of said liquid crystal display module, defining an external appearance of said flat panel displaying apparatus;
- a printed circuit board 125 provided with a connector 127 connected to an external system by a connection cable 151, said printed circuit board being grounded to said chassis by screws 137;
- a liquid crystal display controller 129 provided in said printed circuit board, said liquid crystal display controller activating said liquid crystal display module; and
- ground portions 135 formed around said liquid crystal display controller.

Although it has not been shown in Fig. 1, some of the ground portions 135 formed adjacent to signal lines 133 on the respective substrates are interconnected through holes and connected to the chassis by screws 137.

Applicant's Prior Art discloses a flat panel displaying apparatus that is basically the same as that recited in claim 1 except for a reinforcement connector connected to said ground portion and supporting the ground of said printed circuit board. As shown in Figs. 1-3, Hansell discloses a cable connector module having a reinforcement connector comprising

- a connector body 2 formed with a housing portion 3 receiving a connection cable 10;

- a cover (top of the body 2) provided in said connector body, opening and closing said housing portion, to fasten said connection cable in said housing portion; and

- a ground contact 6 provided in said housing portion of said connector body, said ground contact connected to said connection cable via a ground connector 13, and a ground pin 17 via a spring ground finger 8.

Hansell teaches that the spring ground finger is mechanically stressed prior to ground pin insertion thus enabling it to achieve a high normal force and ensuring reliability and environmental stability when engaged (col. 3, lines 40-45).

Fig. 1 also shows a second reinforcement connector connected to the connection cable. Accordingly, a plurality of reinforcement connectors can be used for grounding and receiving data signals from the external system to the printed circuit board.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the flat panel display apparatus of Applicant's Prior Art of with the teaching of Hansell by employed a reinforcement connector connected to the ground portion and supporting the ground of the printed circuit board for enabling to achieve a high normal force and ensuring reliability and environmental stability when engaged with the connection cable.

Response to Arguments

4. Applicant's arguments filed July 29, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, USPN 5,176,538 of Hansell is employed for teaching a reinforcement connector having a ground spring finger for engaging a ground portion of a printed circuit board so as to provide the ground to said PCB with reliability and stability.

Applicant argued that the Examiner failed to mention that Hansell teaches or suggests the reinforcement connector supporting the ground of said printed circuit board. The Examiner disagrees with the Applicant's remarks since the Examiner did

mention that the reinforcement connector is used for grounding the printed circuit board (PCB). As clearly shown in Figs. 1-3, the reinforcement connector of Hansell comprises spring ground fingers 8, which is an integral part of the ground shield 6, connected to the ground pin 17 of the header 20 of the PCB. Accordingly, the reinforcement connector supports the ground of the PCB.

Further, with respect to claim 2, Applicant argued that Hansell teaches away from the presently claimed invention. The Examiner disagrees since the reinforcement connector of Hansell is connected to the connection cable 10 as clearly seen in Fig. 1

Furthermore, Applicant argued that Hansell does not disclose a cover (top of the body 2) provided in the connector body, opening and closing the housing portion, to fasten the connection cable in said housing portion. The Examiner disagrees with the Applicant's remarks since, by looking at Fig. 1, it is obvious that the cover has to be opened at first to accept the end of the connection cable in the housing portion then closed to fasten the connection cable in said housing portion. Otherwise, the connection cable as well as the ground connection will become loose in said housing portion.

Further, Applicant argued that the reinforcement connector of Hansell is not set to support the ground of the PCB. The Examiner disagrees with the Applicant's remarks since the spring ground finger of the reinforcement connector is mechanically stressed prior to ground pin insertion thus enabling it to achieve a high normal force and ensuring reliability and environmental stability when engaged. Without supporting from the reinforcement connector, the PCB will not be grounded.

Finally, with respect to claim 5, as clearly shown in Figs. 1-3, Hansell discloses a plurality (more than one) of reinforcement connectors having spring fingers 8 connected to the connection cable 10 with a ground to signal ratio of 1:1 (col. 4, lines 7-8).

Allowable Subject Matter

5. Claims 17-20 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claim 17, none of the prior art of record discloses, in combination with other limitations as claimed, a method comprising:

lifting a cover of a reinforcement connector disposed adjacent to a connector of a liquid crystal display, said reinforcement connector being connected to a ground portion;

inserting a connection cable having a ground pin into an inside portion of said reinforcement connector below said cover;

moving said cover downward to close a housing portion of said reinforcement connector; and

engaging a ground contact of said reinforcement connector with said ground pin of said connection cable.

The most relevant references, USPN 5,176,538 of Hansell III et al. and USPN 6,053,770 of Blom, fail to disclose or suggest that method. The Hansell's reference discloses a reinforcement connector comprising a cover and a ground spring finger connected to a connection cable and engaging with a ground pin of the PCB; however, the cover of Hansell does not have a function for lifting and moving downward and the

connection cable of Hansell does not have a ground pin. Meanwhile, as shown in Figs 1-3, the Blom's reference only discloses a connector comprising a connector cable 2 having ground pins 6 disposed adjacent to a connector of a PCB.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

09/23/2003



ROBERT H. KIM
SUPERVISOR BY APPOINTMENT
TECHNOLOGY CENTER